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Review

The relationship between mercury and autism: A comprehensive review and discussion

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ABSTRACT

The brain pathology in autism spectrum disorders (ASD) indicates marked and ongoing inflammatory reactivity with concomitant neuronal damage. These findings are suggestive of neuronal insult as a result of external factors, rather than some type of developmental mishap. Various xenobiotics have been suggested as possible causes of this pathology. In a recent review, the top ten environmental compounds suspected of causing autism and learning disabilities were listed and they included: lead, methylmercury, polychorinated biphenyls, organophosphate pesticides, organochlorine pesticides, endocrine disruptors, automotive exhaust, polycyclic aromatic hydrocarbons, polybrominated diphenyl ethers, and perfluorinated compounds. This current review, however, will focus specifically on mercury exposure and ASD by conducting a comprehensive literature search of original studies in humans that examine the potential relationship between mercury and ASD, categorizing, summarizing, and discussing the published research that addresses this topic. This review found 91 studies that examine the potential relationship between mercury and ASD from 1999 to February 2016. Of these studies, the vast majority (74%) suggest that mercury is a risk factor for ASD, revealing both direct and indirect effects. The preponderance of the evidence indicates that mercury exposure is causal and/or contributory in ASD.

Contents

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